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New WR Central Stars of PNe identified on the AAO/UKST Hα Survey

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Abstract.

Candidate central stars can be seen in some ($\leq$10%) of the many ($\sim$1000) new planetary nebulae found during scans of the AAO/UKST Hα survey of the Milky Way (Parker et al. 2002). Spectroscopic observations have identified seven with Wolf-Rayet emission features, thereby adding significantly to the 56 [WR] central stars already known (Jeffery et al. 1996). Two of these are late-type stars – [WC8] and [WC9-10], and four are early-type around [WC4] or possibly [WO4]. Two of the early-type stars have unusual strong emission features near 4610Å which may be attributed to [N V] and could be indicative of enhanced nitrogen in their atmospheres and unusual stellar evolution. The seventh star is of the [WN] sequence and, if confirmed, would be the only known [WN] central star in the Galaxy. Its surrounding circular nebula has emission lines with expansion velocities exceeding 150 km/s suggesting that the object may not a conventional planetary nebula. The possibility that it is a Population I star with a ring nebula, although looking increasingly less likely, cannot be finally ruled out at this stage. Full details of the [WC] stars have been given by Morgan, Parker, & Russeil (2001) and Parker & Morgan (2002). The candidate [WN] star is described by Morgan & Parker (2002).

References

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